FlyBy Math™ Alignment
Mathematics Content Standards and Performance Standards (Grade Level Expectations) [PSGLEs]
Fourth Edition – March 2006

Content Standard A: Mathematical Facts, Concepts, Principles, and Theories

Content Strand: Estimation and Computation

Estimation:

PSGLE	***FlyBy Math*™ Activities**
The student solves problems (including real-world situations) using estimation by **7] E&C-**1 identifying or using [a variety of **L]** strategies, including truncating, rounding, front-end estimation, compatible numbers, to check for reasonableness of solutions (M3.3.1)	--Predict outcomes and explain results of mathematical models and experiments.
[7] E&C-2 comparing results of different strategies (L) (M3.3.1)	--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation. --Compare predictions, calculations, and experimental evidence for several aircraft conflict problems.

Computation:

PSGLE	***FlyBy Math*™ Activities**
The student accurately solves problems (including real-world situations) by **[7] E&C-6** solving proportions using a given scale (M3.3.6)	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

Content Strand: Functions and Relationships

Describing Patterns and Functions:

PSGLE	***FlyBy Math*™ Activities**
The student demonstrates conceptual understanding of functions, patterns, or sequences including those represented in real-world situations by **[7] F&R-1** describing or extending patterns (linear) up to ten terms, represented in tables, sequences, or in problem situations (M4.3.1)	--Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system.

[7] F&R-2 generalizing relationships (linear) using a table of ordered pairs, a function, or an equation (M4.3.4)	--Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system.

Content Strand: Geometry	
Position and Direction:	
PSGLE The student demonstrates understanding of position and direction by **[7] G-8** graphing or identifying values of variables on a coordinate grid (M5.3.6)	***FlyBy Math*™ Activities** --Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes.

Content Strand: Statistics and Probability	
Analysis and Central Tendency	
PSGLE The student demonstrates an ability to analyze data (comparing, explaining, interpreting, evaluating; drawing or justifying conclusions) by **[7] S&P-2** using information from a variety of displays (e.g., as found in graphical displays in newspapers and magazines) (M6.3.2)	***FlyBy Math*™ Activities** --Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.

Content Standards B, C, D, and E: Process Skills and Abilities

Content Strand: Problem Solving	
PSGLE The student demonstrates an ability to problem solve by **[7] PS-1** selecting, modifying, and applying a variety of problem-solving strategies (e.g., working backwards, drawing a picture, Venn diagrams) and verifying the results (M7.3.2)	***FlyBy Math*™ Activities** --Conduct simulation and measurement for several aircraft conflict problems. --Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
[7] PS-2 evaluating, interpreting, and justifying solutions to problems (M7.3.3)	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.

Content Strand: Communication	
PSGLE The student communicates his or her mathematical thinking by **[7] PS-3** representing mathematical problems numerically, graphically, and/or symbolically; or using appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions (M8.3.1, M8.3.2, & M8.3.3)	***FlyBy Math™* Activities** --Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.

Content Strand: Reasoning	
PSGLE The student demonstrates an ability to use logic and reason by **[7] PS-4** using informal deductive and inductive reasoning in concrete contexts or stating counterexamples to disprove statements; or justifying and defending the validity of mathematical strategies and solutions using examples (M9.3.1, M9.3.2, & M9.3.3)	***FlyBy Math™* Activities** --Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.

Content Strand: Connections	
PSGLE The student demonstrates the ability to apply mathematical skills and processes across the content strands by **[7] PS-5** using real-world contexts such as science, humanities, peers, and community (M10.3.1 & M10.3.2)	***FlyBy Math™* Activities** --Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.